

**EPOCAST® 1636 B US**

Version 1.0      Revision Date: 11/08/2016      SDS Number: 400001008591      Date of last issue: -  
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**SECTION 1. IDENTIFICATION**

Product name : EPOCAST® 1636 B US

**Manufacturer or supplier's details**

Company name of supplier : Huntsman Advanced Materials Americas LLC  
Address : P.O. Box 4980  
The Woodlands,  
TX 77387  
United States of America (USA)  
Telephone : Non-Emergency: (800) 257-5547  
E-mail address of person responsible for the SDS : MSDS@huntsman.com  
Emergency telephone number : Chemtrec: (800) 424-9300 or (703) 527-3887

**Recommended use of the chemical and restrictions on use**

Recommended use : Hardener

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**SECTION 2. HAZARDS IDENTIFICATION****GHS Classification**

Acute toxicity (Oral) : Category 4  
Acute toxicity (Inhalation) : Category 4  
Skin corrosion : Category 1B  
Serious eye damage : Category 1  
Skin sensitisation : Category 1  
Acute aquatic toxicity : Category 3  
Chronic aquatic toxicity : Category 3

**GHS label elements**

Hazard pictograms :



Signal word : Danger

Hazard statements : H302 + H332 Harmful if swallowed or if inhaled  
H314 Causes severe skin burns and eye damage.  
H317 May cause an allergic skin reaction.  
H412 Harmful to aquatic life with long lasting effects.

## SAFETY DATA SHEET

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## Precautionary statements

: **Prevention:**

P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.  
 P264 Wash skin thoroughly after handling.  
 P270 Do not eat, drink or smoke when using this product.  
 P271 Use only outdoors or in a well-ventilated area.  
 P272 Contaminated work clothing should not be allowed out of the workplace.  
 P273 Avoid release to the environment.  
 P280 Wear protective gloves/ protective clothing/ eye protection/ face protection.

**Response:**

P301 + P312 + P330 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell. Rinse mouth.  
 P301 + P330 + P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.  
 P303 + P361 + P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
 P304 + P340 + P310 IF INHALED: Remove person to fresh air and keep comfortable for breathing. Immediately call a POISON CENTER/doctor.  
 P305 + P351 + P338 + P310 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a POISON CENTER/doctor.  
 P333 + P313 If skin irritation or rash occurs: Get medical advice/ attention.  
 P363 Wash contaminated clothing before reuse.

**Storage:**

P405 Store locked up.

**Disposal:**

P501 Dispose of contents/ container to an approved waste disposal plant.

**Other hazards**

None known.

**SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS**

Substance / Mixture      : Mixture

**Hazardous components**

Chemical name	CAS-No.	Concentration (% w/w)
triethylenetetramine	112-24-3	30 - 60
N,N'-[1,7-heptanediylbis[(4,5-dihydro-1H-imidazole-2,1-diyl)-2,1-ethanediyl]]bis1,2-ethanediamine	179796-73-7	13 - 30
metaxylenediamine	1477-55-0	7 - 13
1-methylimidazole	616-47-7	3 - 7
modified aliphatic amine	Not Assigned	0.1 - 1
2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine	Not Assigned	0.1 - 1

The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

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**SECTION 4. FIRST AID MEASURES**

- General advice : Move out of dangerous area.  
Consult a physician.  
Show this safety data sheet to the doctor in attendance.  
Do not leave the victim unattended.
- If inhaled : If unconscious, place in recovery position and seek medical advice.  
If symptoms persist, call a physician.
- In case of skin contact : Immediate medical treatment is necessary as untreated wounds from corrosion of the skin heal slowly and with difficulty.  
If on skin, rinse well with water.  
If on clothes, remove clothes.
- In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.  
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.  
Continue rinsing eyes during transport to hospital.  
Remove contact lenses.  
Protect unharmed eye.  
Keep eye wide open while rinsing.  
If eye irritation persists, consult a specialist.
- If swallowed : Keep respiratory tract clear.  
Do NOT induce vomiting.  
Do not give milk or alcoholic beverages.  
Never give anything by mouth to an unconscious person.  
If symptoms persist, call a physician.  
Take victim immediately to hospital.
- Most important symptoms and effects, both acute and delayed : None known.
- Notes to physician : No information available.

**SECTION 5. FIREFIGHTING MEASURES**

- Suitable extinguishing media : No data is available on the product itself.
- Unsuitable extinguishing media : High volume water jet
- Specific hazards during firefighting : Do not allow run-off from fire fighting to enter drains or water courses.
- Hazardous combustion : No data is available on the product itself.

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products

- Specific extinguishing methods : No data is available on the product itself.
- Further information : Collect contaminated fire extinguishing water separately. This must not be discharged into drains.  
Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
- Special protective equipment for firefighters : Wear self-contained breathing apparatus for firefighting if necessary.
- 

**SECTION 6. ACCIDENTAL RELEASE MEASURES**

- Personal precautions, protective equipment and emergency procedures : Use personal protective equipment.
- Environmental precautions : Prevent product from entering drains.  
Prevent further leakage or spillage if safe to do so.  
If the product contaminates rivers and lakes or drains inform respective authorities.
- Methods and materials for containment and cleaning up : Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust).  
Keep in suitable, closed containers for disposal.
- 

**SECTION 7. HANDLING AND STORAGE**

- Advice on protection against fire and explosion : Normal measures for preventive fire protection.
- Advice on safe handling : Do not breathe vapours/dust.  
Avoid exposure - obtain special instructions before use.  
Avoid contact with skin and eyes.  
For personal protection see section 8.  
Smoking, eating and drinking should be prohibited in the application area.  
To avoid spills during handling keep bottle on a metal tray.  
Dispose of rinse water in accordance with local and national regulations.  
Persons susceptible to skin sensitisation problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
- Conditions for safe storage : Keep container tightly closed in a dry and well-ventilated place.  
Containers which are opened must be carefully resealed and kept upright to prevent leakage.  
Observe label precautions.  
Electrical installations / working materials must comply with the technological safety standards.

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Materials to avoid : Strong acids  
Strong bases  
Strong oxidizing agents

**SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION****Components with workplace control parameters**

Components	CAS-No.	Value type (Form of exposure)	Control parameters / Permissible concentration	Basis
metaxylenediamine	1477-55-0	C	0.1 mg/m3	ACGIH

**Personal protective equipment**

## Hand protection

Material : butyl-rubber  
Break through time : > 8 h

Solvent-resistant gloves (butyl-rubber)  
Nitrile rubber  
10 - 480 min

Remarks : The suitability for a specific workplace should be discussed with the producers of the protective gloves.

Eye protection : Eye wash bottle with pure water  
Tightly fitting safety goggles  
Wear face-shield and protective suit for abnormal processing problems.

Skin and body protection : Impervious clothing  
Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures : When using do not eat or drink.  
When using do not smoke.  
Wash hands before breaks and at the end of workday.

**SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES**

Appearance : liquid  
Colour : amber  
Odour : amine-like  
Odour Threshold : No data is available on the product itself.  
pH : No data is available on the product itself.

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Melting point/freezing point : No data available

Boiling point/boiling range : No information available.

Flash point : > 118 °C Method: Pensky-Martens closed cup, closed cup

Evaporation rate : No data is available on the product itself.

Flammability (solid, gas) : No data is available on the product itself.

Flammability (liquids) : No data is available on the product itself.

Upper explosion limit : No data is available on the product itself.

Lower explosion limit : No data is available on the product itself.

Vapour pressure : No data is available on the product itself.

Relative vapour density : No data is available on the product itself.

Relative density : 1

Density : 1.07 g/cm<sup>3</sup> (20 °C)

Solubility(ies)

    Water solubility : partly soluble (20 °C)

    Solubility in other solvents : No data is available on the product itself.

Partition coefficient: n-octanol/water : No data is available on the product itself.

Auto-ignition temperature : No data is available on the product itself.

Decomposition temperature : > 200 °C

Self-Accelerating decomposition temperature (SADT) : No data is available on the product itself.

Viscosity

    Viscosity, dynamic : ca. 1,000 mPa.s

Molecular weight : No data available

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### SECTION 10. STABILITY AND REACTIVITY

Reactivity : No decomposition if stored and applied as directed.

Chemical stability : No decomposition if stored and applied as directed.

Possibility of hazardous reactions : No decomposition if stored and applied as directed.

Conditions to avoid : No data available

Incompatible materials : No data available

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Hazardous decomposition products : Carbon oxides  
Nitrogen oxides (NOx)  
Burning produces noxious and toxic fumes.

**SECTION 11. TOXICOLOGICAL INFORMATION**

Information on likely routes of exposure : No data is available on the product itself.

**Acute toxicity**

Acute oral toxicity - Product : Acute toxicity estimate : 1,307 mg/kg  
Method: Calculation method

Acute inhalation toxicity - Product : Acute toxicity estimate: 4.75 mg/l  
Exposure time: 4 h  
Test atmosphere: dust/mist  
Method: Calculation method

Acute dermal toxicity - Product : Acute toxicity estimate : 2,217 mg/kg  
Method: Calculation method

Acute toxicity (other routes of administration) : No data available

**Skin corrosion/irritation****Product:**

Remarks: Extremely corrosive and destructive to tissue.

**Serious eye damage/eye irritation****Product:**

Remarks: May cause irreversible eye damage.

**Respiratory or skin sensitisation****Product:**

Remarks: Causes sensitisation.

**Components:**

metaxylenediamine:

Assessment:

Harmful if swallowed or if inhaled, May be harmful in contact with skin., Causes severe skin burns and eye damage.  
May cause an allergic skin reaction.

**Germ cell mutagenicity****Components:**

triethylenetetramine:

Genotoxicity in vitro

: Concentration: 0 - 200 µg/L

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Metabolic activation: negative  
Method: OECD Test Guideline 482  
Result: negative

metaxylenediamine:  
Genotoxicity in vitro

: Test Type: Ames test  
Species: Salmonella typhimurium  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative  
GLP: yes

Test Type: Chromosome aberration test in vitro  
Species: Chinese hamster lung cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative  
GLP: yes

Test Type: In vitro mammalian cell gene mutation test  
Species: mouse lymphoma cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative  
GLP: yes

1-methylimidazole:  
Genotoxicity in vitro

: Metabolic activation: with and without metabolic activation  
Result: negative

Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 471  
Result: negative

Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 476  
Result: negative

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
Genotoxicity in vitro

: Test Type: Ames test  
Species: Salmonella typhimurium  
Concentration: 5000 ug/plate  
Metabolic activation: with and without metabolic activation  
Method: Directive 67/548/EEC, Annex, B.13/14  
Result: negative

Test Type: Chromosome aberration test in vitro  
Species: Chinese hamster ovary cells  
Metabolic activation: with and without metabolic activation  
Method: OECD Test Guideline 473  
Result: negative

Test Type: In vitro mammalian cell gene mutation test  
Species: Chinese hamster ovary cells  
Concentration: 2 mg/ml  
Metabolic activation: with and without metabolic activation



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Method: OECD Test Guideline 476

Result: negative

**Components:**

triethylenetetramine:

Genotoxicity in vivo

: Application Route: Intraperitoneal injection

Dose: 0 - 600 mg/kg

Method: OECD Test Guideline 474

Result: negative

metaxylenediamine:

Genotoxicity in vivo

: Test Type: In vivo micronucleus test

Species: Mouse (male and female)

Cell type: Bone marrow

Application Route: Oral

Exposure time: single dose

Dose: 750 mg/kg body weight

Method: OECD Test Guideline 474

Result: negative

GLP: yes

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Genotoxicity in vivo

: Species: Chinese hamster (male and female)

Cell type: Bone marrow

Application Route: Oral

Dose: 825 - 1000 mg/kg

Method: OECD Test Guideline 474

Result: negative

Test Type: In vivo micronucleus test

Species: Mouse (male and female)

Application Route: Oral

Dose: 850 - 1000 mg/kg

Method: OECD Test Guideline 474

Result: negative

**Components:**

metaxylenediamine:

Germ cell mutagenicity-  
Assessment

: Tests on bacterial or mammalian cell cultures did not show mutagenic effects., Animal testing did not show any mutagenic effects.

Germ cell mutagenicity-  
Assessment

: No data available

**Carcinogenicity****Components:**

triethylenetetramine:

Species: Mouse, (male)

Application Route: Dermal

Dose: 42 mg/kg

Frequency of Treatment: 3 days/week

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Method: OECD Test Guideline 451  
 Result: negative

Species: Mouse, (male)  
 Application Route: Dermal  
 Exposure time: 104 weeks  
 Dose: 16.8 mg/kg  
 Frequency of Treatment: 3 days/week  
 Method: OECD Test Guideline 451

Carcinogenicity - Assessment : No data available

**IARC** : No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

**OSHA** : No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**NTP** : No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

**Reproductive toxicity****Components:**

metaxylenediamine:  
 Effects on fertility

: Species: Rat, male and female  
 Application Route: Oral  
 Dose: 0, 50, 150 and 450 mg/kg  
 General Toxicity - Parent: No-observed-effect level: 50 - 150 mg/kg body weight  
 General Toxicity F1: No-observed-effect level: 450 mg/kg body weight  
 Method: OECD Test Guideline 421  
 Result: No effects on fertility and early embryonic development were detected.  
 GLP: yes

1-methylimidazole:

Species: Rat, male and female  
 Application Route: Oral  
 Method: OECD Test Guideline 422  
 Result: No effects on fertility and early embryonic development were detected.

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species: Rat, male and female  
 Application Route: Oral  
 Dose: 10, 60, 120 mg/kg bw/day  
 Method: OECD Test Guideline 416  
 Result: No effects on fertility and early embryonic development were detected.

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**Components:**

triethylenetetramine:  
Effects on foetal  
development

: Species: Rat  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
> 750 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

Species: Rabbit  
Application Route: Dermal  
General Toxicity Maternal: No observed adverse effect level:  
125 mg/kg body weight  
Method: OECD Test Guideline 414  
Result: No teratogenic effects

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Species: Rabbit, female  
Application Route: Oral  
General Toxicity Maternal: No observed adverse effect level:  
50,000 ppm  
Result: No teratogenic effects

**Components:**

metaxylenediamine:  
Reproductive toxicity -  
Assessment

: No evidence of adverse effects on sexual function and fertility,  
or on development, based on animal experiments.

**STOT - single exposure**

No data available

**STOT - repeated exposure**

No data available

**Repeated dose toxicity****Components:**

triethylenetetramine:  
Species: Rat, male and female  
NOAEL: 50 mg/kg/d  
Application Route: Ingestion  
Exposure time: 26 Weeks  
Number of exposures: 7 d  
Method: Subchronic toxicity

metaxylenediamine:  
Species: Rat, male and female  
NOEL: 150 mg/kg  
Application Route: oral (gavage)  
Exposure time: 672 h  
Number of exposures: 7 d  
Dose: 0, 10, 40, 150 and 600 mg/kg/d

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Method: OECD Test Guideline 407  
GLP: yes

Species: Rat, male and female  
: 0.6 mg/m<sup>3</sup>  
Application Route: Inhalation  
Exposure time: 13 weeks  
Number of exposures: 6 hours per day, 5 days per we  
Dose: 0, 0.64, 5.1, 31 mg/m<sup>3</sup>  
Method: OECD Test Guideline 413  
GLP: yes  
Target Organs: Lungs

1-methylimidazole:  
Species: Rat, male and female  
NOAEL: 30 mg/kg/d  
Application Route: Ingestion  
Number of exposures: 7 d  
Method: Subacute toxicity

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
Species: Rat, male and female  
NOAEL: 10 mg/kg bw/day  
Application Route: Ingestion  
Exposure time: 13 Weeks  
Number of exposures: Daily  
Dose: 10, 60, 180mg/kg bw  
Target Organs: Liver

Species: Rat, male and female  
LOAEL: 60 mg/kg bw/day  
Application Route: Ingestion  
Exposure time: 13 Weeks  
Number of exposures: Daily  
Dose: 10, 60, 180mg/kg bw  
Target Organs: Liver

### Components:

metaxylenediamine:  
Repeated dose toxicity - Assessment : Harmful if swallowed or if inhaled, May be harmful in contact with skin., Causes severe skin burns and eye damage.  
No adverse effect has been observed in chronic toxicity tests.

### **Aspiration toxicity**

No data available

### **Experience with human exposure**

General Information: No data available

Inhalation: No data available

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Skin contact: No data available

Eye contact: No data available

Ingestion: No data available

**Toxicology, Metabolism, Distribution**

No data available

**Neurological effects**

No data available

**Further information****Product:**

Remarks: No data available

**SECTION 12. ECOLOGICAL INFORMATION****Ecotoxicity****Components:**

triethylenetetramine:

Toxicity to fish : LC50 (Pimephales promelas (fathead minnow)): 330 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: Fish Acute Toxicity Test

metaxylenediamine:

Toxicity to fish : LC50 (Oryzias latipes (Orange-red killifish)): 87.6 mg/l  
Exposure time: 96 h  
Test Type: semi-static test  
Method: OECD Test Guideline 203  
GLP: yes

1-methylimidazole:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): > 100 - < 215 mg/l  
Exposure time: 96 h  
Test Type: static test  
Test substance: Fresh water  
Method: DIN 38412

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Toxicity to fish : LC50 (Leuciscus idus (Golden orfe)): 174 mg/l  
Exposure time: 48 h  
Method: DIN 38412

**Components:**

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triethylenetetramine:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.1 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.2.

metaxylenediamine:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 15.2 mg/l  
Exposure time: 48 h  
Test Type: static test  
Method: OECD Test Guideline 202  
GLP: yes

1-methylimidazole:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 267.9 mg/l  
Exposure time: 48 h  
Test Type: static test  
Test substance: Fresh water  
Method: Directive 67/548/EEC, Annex V, C.2.

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
Toxicity to daphnia and other aquatic invertebrates : EC50 (Daphnia magna (Water flea)): 31.5 mg/l  
Exposure time: 24 h  
Method: DIN 38412

### Components:

triethylenetetramine:  
Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 20 mg/l  
Exposure time: 72 h  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

metaxylenediamine:  
Toxicity to algae : ErC50 (Selenastrum capricornutum (green algae)): 32.1 mg/l  
Exposure time: 72 h  
Test Type: static test  
Method: OECD Test Guideline 201  
GLP: yes

1-methylimidazole:  
Toxicity to algae : ErC50 (Desmodesmus subspicatus (Scenedesmus subspicatus)): 180.7 mg/l  
Exposure time: 72 h  
Test Type: static test  
Test substance: Fresh water  
Method: OECD Test Guideline 201

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
Toxicity to algae : ErC50 (Pseudokirchneriella subcapitata (algae)): 43.5 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201  
  
EC50 (Pseudokirchneriella subcapitata (algae)): 37.1 mg/l

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Exposure time: 72 h  
Method: OECD Test Guideline 201

NOEC (Pseudokirchneriella subcapitata (algae)): 16 mg/l  
Exposure time: 72 h  
Method: OECD Test Guideline 201

M-Factor (Acute aquatic toxicity) : No data available

**Components:**

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Toxicity to fish (Chronic toxicity) : NOEC (Brachydanio rerio (zebrafish)): 10.9 mg/l  
Exposure time: 30 d  
Method: OECD Test Guideline 210

Lowest Observed Effect Concentration (Brachydanio rerio (zebrafish)): 10.9 mg/l  
Exposure time: 30 d  
Method: OECD Test Guideline 210

**Components:**

triethylenetetramine:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : EC10 (Daphnia magna (Water flea)): 1.9 mg/l  
Exposure time: 21 d  
Test Type: semi-static test  
Test substance: Fresh water  
Method: OECD Test Guideline 202

metaxylenediamine:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 4.7 mg/l  
Exposure time: 21 d  
Test Type: semi-static test  
Method: OECD Test Guideline 211  
GLP: yes

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity) : NOEC (Daphnia magna (Water flea)): 1.02 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

Lowest Observed Effect Concentration (Daphnia magna (Water flea)): 1.02 mg/l  
Exposure time: 21 d  
Method: OECD Test Guideline 211

M-Factor (Chronic aquatic toxicity) : No data available

**Components:**

triethylenetetramine:

Toxicity to bacteria : EC50 (activated sludge): 800 mg/l  
Exposure time: 0.5 h  
Test Type: static test

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Test substance: Fresh water

metaxylendiamine:  
Toxicity to bacteria : EC50 (activated sludge): > 1,000 mg/l  
Exposure time: 0.5 h  
Test Type: static test  
Method: OECD Test Guideline 209  
GLP: yes

1-methylimidazole:  
Toxicity to bacteria : EC50 (activated sludge): 1,050 mg/l  
Exposure time: 7 h  
Method: DIN 38 412 Part 8

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
Toxicity to bacteria : IC50 (*Pseudomonas putida*): 89 mg/l  
Exposure time: 17 h

### Components:

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
Toxicity to soil dwelling organisms : NOEC (*Eisenia fetida* (earthworms)): >= 1,000 mg/kg  
Exposure time: 56 d  
Method: OECD Test Guideline 222

EC50 (*Eisenia fetida* (earthworms)): >= 1,000 mg/kg  
Exposure time: 56 d  
Method: OECD Test Guideline 222

Plant toxicity : No data available

Sediment toxicity : No data available

Toxicity to terrestrial organisms : No data available

Ecotoxicology Assessment  
Acute aquatic toxicity : No data available

Chronic aquatic toxicity : No data available

Toxicity Data on Soil : No data available

Other organisms relevant to the environment : No data available

Further information:  
No data available

### **Persistence and degradability**

#### Components:

triethylenetetramine:  
Biodegradability : Inoculum: activated sludge  
Result: Not readily biodegradable.  
Biodegradation: 0 %



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Exposure time: 162 d  
Method: OECD Test Guideline 301D

Inoculum: activated sludge  
Result: Not readily biodegradable.  
Biodegradation: 20 %  
Exposure time: 84 d  
Method: Inherent Biodegradability: Modified SCAS Test

metaxylenediamine:  
Biodegradability

: Inoculum: activated sludge  
Concentration: 14.2 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 49 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301B  
GLP: yes

1-methylimidazole:  
Biodegradability

: Inoculum: activated sludge  
Result: Not readily biodegradable.  
Biodegradation: 0 - 10 %  
Exposure time: 28 d  
Method: OECD Test Guideline 301F

Inoculum: activated sludge  
Concentration: 9,000 mg/l  
Result: Inherently biodegradable.  
Biodegradation: 79 %  
Exposure time: 60 d  
Method: ISO Method, other

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
Biodegradability

: Inoculum: activated sludge  
Concentration: 11.4 mg/l  
Result: Not readily biodegradable.  
Biodegradation: 7 %  
Exposure time: 28 d

Biochemical Oxygen  
Demand (BOD)

: No data available

Chemical Oxygen Demand  
(COD)

: No data available

BOD/COD

: No data available

ThOD

: No data available

BOD/ThOD

: No data available

Dissolved organic carbon  
(DOC)

: No data available

Physico-chemical

: No data available

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removability

Stability in water : No data available

Photodegradation : No data available

Impact on Sewage Treatment : No data available

**Bioaccumulative potential****Components:**

metaxylenediamine:  
 Bioaccumulation : Species: Cyprinus carpio (Carp)  
 Bioconcentration factor (BCF): < 0.3  
 Remarks: Does not bioaccumulate.

**Components:**

triethylenetetramine:  
 Partition coefficient: n-octanol/water : log Pow: -2.65 (20 °C)  
 Method: OECD Test Guideline 117

metaxylenediamine:  
 Partition coefficient: n-octanol/water : log Pow: 0.18 (25 °C)  
 pH: 10.3 - 10.4  
 Method: OECD Test Guideline 107  
 GLP: yes

1-methylimidazole:  
 Partition coefficient: n-octanol/water : log Pow: -0.19 (25 °C)  
 pH: 9.25 - 9.85  
 Method: OECD Test Guideline 107

2,2,4(or 2,4,4)-trimethylhexane-1,6-diamine:  
 Partition coefficient: n-octanol/water : log Pow: -0.3 (25 °C)  
 Method: OECD Test Guideline 117

**Mobility in soil**

Mobility : No data available

**Components:**

triethylenetetramine:  
 Distribution among environmental compartments : Koc: 1584.9 - 5012 Method: OECD Test Guideline 106

1-methylimidazole:  
 Distribution among environmental compartments : Koc: 27 Method: Calculation method

Stability in soil : No data available

**Other adverse effects**

Environmental fate and pathways : No data available

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Results of PBT and vPvB assessment : No data available

Endocrine disrupting potential : No data available

Adsorbed organic bound halogens (AOX) : No data available

**Hazardous to the ozone layer**

Ozone-Depletion Potential : Regulation: 40 CFR Protection of Environment; Part 82 Protection of Stratospheric Ozone - CAA Section 602 Class I Substances  
Remarks: This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

Additional ecological information - Product : An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.  
Harmful to aquatic life with long lasting effects.

Global warming potential (GWP) : No data available

**SECTION 13. DISPOSAL CONSIDERATIONS****Disposal methods**

Waste from residues : The product should not be allowed to enter drains, water courses or the soil.  
Do not contaminate ponds, waterways or ditches with chemical or used container.  
Send to a licensed waste management company.

Contaminated packaging : Empty remaining contents.  
Dispose of as unused product.  
Do not re-use empty containers.

**SECTION 14. TRANSPORT INFORMATION****International Regulations****IATA**

UN/ID No.	: UN 2735
Proper shipping name	: Polyamines, liquid, corrosive, n.o.s. (TRIETHYLENE TETRAMINE, M-XYLYLENE DIAMINE)
Class	: 8
Packing group	: II
Labels	: Corrosive

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Packing instruction (cargo aircraft) : 855  
Packing instruction (passenger aircraft) : 851

### IMDG

UN number : UN 2735  
Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.  
(TRIETHYLENE TETRAMINE, M-XYLYLENE DIAMINE)  
Class : 8  
Packing group : II  
Labels : 8  
EmS Code : F-A, S-B  
Marine pollutant : no

**Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**  
Not applicable for product as supplied.

### National Regulations

#### DOT Classification

UN/ID/NA number : UN 2735  
Proper shipping name : POLYAMINES, LIQUID, CORROSIVE, N.O.S.  
(TRIETHYLENE TETRAMINE, M-XYLYLENE DIAMINE)  
Class : 8  
Packing group : II  
Labels : CORROSIVE  
ERG Code : 153  
Marine pollutant : no

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## SECTION 15. REGULATORY INFORMATION

### EPCRA - Emergency Planning and Community Right-to-Know Act

**SARA 311/312 Hazards** : No SARA Hazards

**SARA 313** : This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 112 (40 CFR 61).

**California Prop. 65** : This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

### The components of this product are reported in the following inventories:

CH INV : The formulation contains substances listed on the Swiss Inventory, Not in compliance with the inventory  
TSCA : On TSCA Inventory

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DSL : Low volume exemption, All components of this product are on the Canadian DSL  
 AICS : Not in compliance with the inventory  
 NZIoC : Not in compliance with the inventory  
 ENCS : Low volume exemption, On the inventory, or in compliance with the inventory  
 KECI : Not in compliance with the inventory  
 PICCS : Not in compliance with the inventory  
 IECSC : Low volume exemption, On the inventory, or in compliance with the inventory  
 TCSI : Not in compliance with the inventory

**Inventories**

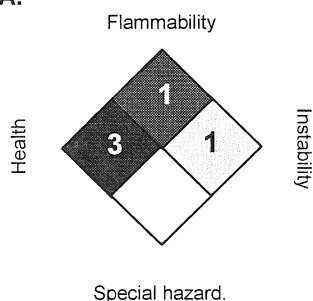
AICS (Australia), DSL (Canada), IECSC (China), REACH (European Union), ENCS (Japan), ISHL (Japan), KECI (Korea), NZIoC (New Zealand), PICCS (Philippines), TCSI (Taiwan), TSCA (USA)

**TSCA - 5(a) Significant New Use Rule List of Chemicals**

No substances are subject to a Significant New Use Rule.

**US. Toxic Substances Control Act (TSCA) Section 12(b) Export Notification (40 CFR 707, Subpt D)**

No substances are subject to TSCA 12(b) export notification requirements.

**SECTION 16. OTHER INFORMATION****Further information****NFPA:****HMIS III:**

<b>HEALTH</b>	<b>3</b>
<b>FLAMMABILITY</b>	<b>1</b>
<b>PHYSICAL HAZARD</b>	<b>1</b>

0 = not significant, 1 = Slight,

2 = Moderate, 3 = High

4 = Extreme, \* = Chronic

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The information and recommendations in this publication are to the best of our knowledge, information and belief accurate at the date of publication, NOTHING HEREIN IS TO BE CONSTRUED AS A WARRANTY, EXPRESS OR OTHERWISE.

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